



# PAARAgraphs

Celebrating 62 years as an *active* ham radio club—*Since 1937*  
Newsletter for the Palo Alto Amateur Radio Association, Inc.



## CALENDAR

- Nov 5, **PAARA Meeting**, 7:30,  
Menlo Park Recreation Center  
700 Alma Street, Menlo Park
- Nov 10, **PAARA Board Meeting**, 7:30  
Red Cross Bld., 400 Mitchell Ln., Palo Alto
- Dec 3, **PAARA Meeting**, 7:30
- Dec 8, **PAARA Board Meeting**, 7:30
- Jan 7, **PAARA Meeting**, 7:30
- Jan 12, **PAARA Board Meeting**, 7:30
- Jan 14, **PAARA Winter Party**  
"Michaels At Shoreline Restaurant", 2960 N Shoreline Blvd, MtView

2 m CODE PRACTICE, 2000 to 2030 PST Tues  
W6APZ 145.23 repeater



## PROGRAM

November 5, 1999  
7:30 P.M.

**Speaker:**

Speaker unknown at press time  
Check net Monday night

Join us for pre-meeting eyeball  
6 pm— at Su Hong Restaurant, 1039 El Camino Real, Menlo Park

PAARA Radio NET every Monday evening at 8:30 P.M., local time  
on the 145.230 -600 MHz repeater, PL tone off



## PAARA PONDERINGS

de VIC BLACK, AB6SO

Congratulations to PAARA member **David Ronsse, N6VSN**, who passed the General Class written exam September 18. David now has up to a year to work on the CW requirement. Congratulations also to Troop 5 Boy Scout **Ben Archer** who is now Tech class **KF6YYC** as of October 7. Ben's dad is PAARA member **Loren K7LRN**.

Each month WorldRadio magazine lists the most recent call-signs issued by license class for each FCC district. What's the chance that your call-sign will be listed in this "Callsign Lotto"? The listing in the October issue of the magazine shows new PAARA member **Ben Friedlander AD6JA** as the last current call issued when the magazine went to print. Ben, a former ham, went from no US license to Extra Class in one test session. Congratulations to Ben!

Watch for **Special Event Station VK2000** from Jan 1, 2000 through Dec 31, 2000. Operated by the New South Wales Division of the Wireless Institute of Australia, the station will commemorate the last Olympic Games of the 20<sup>th</sup> century, scheduled for Sydney, Australia.

Also watch for Philippine stations using the special prefix DU67. This is to commemorate the 67<sup>th</sup> anniversary of the Philippine Amateur Radio Association. They are authorized to use the prefix until the end of the year.

The FCC has announced new regulations for the use of Spread Spectrum by US amateur operators. The Report and Order, WT Docket 97-12 available at <http://www.arrl.org/announce/regulatory/wt97-12> was adopted Aug 31 and released Sept 3. The new rules take effect Nov 1, 1999. Quite often the headlines and announcements give a lot while the fine print takes away. I read the entire Report and Order and was surprised at the respect the FCC has shown for the Amateur Service. Some commercial services sharing the Amateur bands asserted that hams would use too much power and interfere with the delicate balance achieved by the commercial interests.

(Continued on page 105)Ponderings

## Miscellaneous Dates

**Flea Market at Foothill** (info at: <http://joslin.com/FleaMarket/>)  
 Watch for schedule in the Spring

### PAARA Palo Alto Amateur Radio Association

meets 1st Friday 7:30 each month, Net 145.230 each Monday 8:30,  
 contact: Andreas Junge N6NU.....(650) 233 0843

### EMARC Electronics Museum Amateur Radio Club

meets 4th Friday 7:30 each month,  
 contact: Sheldon Edelman 650-858-2176, [Edelman@richochet.net](mailto:Edelman@richochet.net)

### NCDXC Northern California DX Club

meets 2nd Friday 7:30 each month, repeater for member info 147.360, Thur 8:00PM,  
 contact: Bob Mammarella KB6FEC 408 729 1544.

### NorCalQRP Northern California QRP Club

meets 1st Sunday each month,  
 contact: Jim Cates 3241 Eastwood Rd., Sacramento, CA 95821.

### Perham Foundation,

contact: Jerry Tucker WA6LNV 650-961-3266

### SPECS Southern Peninsula Emergency Communication System

meets each Monday 8:00PM on Net 145.27, 440.80 MHz, [www.specsnet.org](http://www.specsnet.org)  
 contact: Tom Cascone, KF6LWZ, 650-688-0441, [specs@svpal.org](mailto:specs@svpal.org)

### SCARES South County Amateur Radio Emergency Service

meets 3rd Thursday 7:30 each month, San Carlos City Hall.  
 Net is on 144.45 & 444.50 (PL-100) 7:30 Monday evenings.  
 contact:

### SCCARA Santa Clara County Amateur Radio Association

Operates W6UU repeater 146.385+ Nets: 2m, W6UU, 7:30 Mon; 10m,  
 28.385, 8:00 Thur. meets 2nd Mon each month.  
 contact: Jack Ruckman AC6FU

### SVECS Silicon Valley Emergency Communications

Operates WB6ADZ repeater (146.115 MHz+)  
 contact: Lou Stierer WA6QYS 408 241 7999

### WVARA West Valley Amateur Radio Association

operates W6PIY repeater 147.39+, 223.96, 441.875, 1286.2  
 meets 3rd Wed every month.  
 contact: Glen Lokke Jr. KE6NBO at 408 971 8626, or [glokke@pacbell.net](mailto:glokke@pacbell.net)

### Disaster Services,

**PALO ALTO CHAPTER, American Red Cross**  
 Meets 3rd Wed. each month 7:30PM,  
 HF, packet, BBS, ATV, OSCAR Gateway, NASA satellite,  
 contact: Alan Ball 650-688-0423.

**SAN JOSE CHAPTER, American Red Cross**  
 contact: Scott Hensley KB6UOO, 408 249 7093, [sh@richochet.net](mailto:sh@richochet.net)

### VE Exams, 3rd Saturday each month, 11AM, 145.23- PL=100Hz

American Legion Hall, 651 El Camino Real, R.C.  
 contact: Al Montoya at [WB6IMX@worldnet.att.net](mailto:WB6IMX@worldnet.att.net)

## NOVEMBER Contest Calendar 1999

~Vic Black, AB6SO~

(for rules and exchanges, see [www.contesting.com](http://www.contesting.com))

- 6,7 Ukrainian DX Contest 1200Z, Nov 6-1200Z, Nov 7
- 6-8 ARRL Sweepstakes Contest, CW 2100Z, Nov 6-0300Z, Nov 8
- 7 High Speed Club CW Contest 0900Z-1100Z, Nov 7&1500Z-1700Z, Nov 7
- 12-14 Japan Int. DX Contest, Phone 2300Z, Nov 12-2300Z, Nov 14
- 13,14 WAE DX Contest, RTTY 0000Z, Nov 13-2400Z, Nov 14
- 13,14 OK/OM DX Contest, CW 1200Z, Nov 13-1200Z, Nov 14
- 18 Predicted Leonids Peak Thursday, November 18.
- 20,21 IARU Region 1 160m Contest, CW 1400Z, Nov 20-0800Z, Nov 21
- 20-22 ARRL Sweepstakes Contest, SSB 2100Z, Nov 20-0300Z, Nov 22
- 20,21 RSGB 1.8 MHz Contest, CW 2100Z, Nov 20-0100Z, Nov 21
- 27,28 CQ Worldwide DX Contest, CW 0000Z, Nov 27-2400Z, Nov 28

### The PAARA Winter Party

January 14 at "Michaels at Shoreline"

The cost will run \$20-\$25 each.

We would like a preliminary count at the November meeting.

—Andreas, N6NU—

### Palo Alto Amateur Radio Association, Inc.

**PO Box 911**

**Menlo Park, CA 94026**

|                           |   |                |
|---------------------------|---|----------------|
| President                 | Andreas Junge N6NU.....   | (650) 233 0843 |
|                           | <a href="mailto:andreas@attech.com">andreas@attech.com</a>  |                |
| Vice President            | Jon Zweig, AD6FX  | (650) 324 8751 |
|                           | <a href="mailto:jzweig@sirius.com">jzweig@sirius.com</a>  |                |
| Secretary                 | Dave Rice, W6NUC  | (650) 593 7840 |
|                           | <a href="mailto:w6nuc@arri.net">w6nuc@arri.net</a>  |                |
| Treasurer.....            | Doug Schliebus, K1DIT.....  | (650) 851 0727 |
|                           | <a href="mailto:schliebus@aol.com">schliebus@aol.com</a>  |                |
| Membership*.....          | Vic Black, AB6SO.....   | (650) 366 0636 |
|                           | <a href="mailto:vic.black@adept.com">vic.black@adept.com</a> , <a href="mailto:ab6so@smrm.com">ab6so@smrm.com</a> |                |
| Trustee/Property/Badges.. | Fred Canham, K6YT   | (650) 948 9238 |
| ARES Officer.....         | Lily Anne Hillis, N6PGM   | (650) 325 5484 |
| Club Historian.....       | Steve Stuntz, K6FS  | (650) 322 4952 |
| Advertising.....          | Bob Korte, KD6KYT.....  | (650) 595 1842 |
| Webmaster .....           | Andreas Junge AD6FQ.....  | (650) 233 0843 |
|                           | <a href="mailto:andreas@attech.com">andreas@attech.com</a>  |                |

\*New Committee 12/98

### Board of Directors

|  |                    |
|--|--------------------|
| Charles Grandjean, WD6FAF                                | (408) 739 5185 '00 |
| <a href="mailto:wd6fafwebtv.net">wd6fafwebtv.net</a>     |                    |
| John Buonocore, KD6ZL                                    | (650) 366 1658 '99 |
| Terry Conboy, N6RY                                       | (925) 944 5388 '99 |
| <a href="mailto:n6ry@qsl.net">n6ry@qsl.net</a>           |                    |
| Steve Stuntz, K6FS                                       | (650) 322 4952 '99 |
| Doug Schliebus, K1DIT                                    | (650) 851 0727 '00 |
| <a href="mailto:schliebus@aol.com">schliebus@aol.com</a> |                    |

(see "Calendar" for Board meeting times, visitors welcome)

### PAARAgaphs Staff

|               |  |                |
|---------------|--|----------------|
| Editor.....   | Wally Porter, K6URO.....   | (650) 494 7038 |
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**PAARAgaphs e-mail address: [wmpor@attech.com](mailto:wmpor@attech.com)**

Submit material for PAARAgaphs by the 15th

**PAARA Website <http://www.qsl.net/paara/>**

## JOTA Jamboree on the Air

Special accolades go to the Scouts and volunteers of the Stanford District, Pacific Skyline Council, Boy Scouts of America. This past weekend, 300 Scouts participated in a Mountain Man Rendezvous at Boulder Creek Scout Reservation. The Scouts lived with and learned from the Mountain Men, 96 volunteers who faithfully reproduced lifestyles of the California trappers from 1825-1840. Activities included caber toss, flint and steel, archery, hawk toss, candle making, rope making, rifle safety including black powder rifles, knife throwing, jerky making, ball making, bull whip, Dutch oven cooking, and black smithing. Boys from Troops 5, 14, 30, 31, 33, 37, 57, 75, 287 and 444 participated in the three-day event, supported by dozens of adult volunteers.

Scouts at the Mountain Man Rendezvous also participated in the 42<sup>nd</sup> annual Jamboree on the Air, which took place that weekend. They erected antennas in the woods and talked, by means of ham radio, with their counterparts at 19 other sites. The 107 Mountain (Radio) Men were part of a half million Scouts and Guides worldwide, who shared experiences as part of the JOTA event

We have a new ham Ben Archer - KF6YYC (son of Loren K7LRN). Special thanks to PAARA members Loren Archer K7LRN and Seth Mallory KF6UZX, for their dedicated work with the Scouts, particularly JOTA.

—Amy Trayer and Doug Mecham, KC6UKL



## WEB WANDERINGS

de Vic Black, AB6SO

More than fifty percent of the US population now lives within 50 miles of the coast. This is the main reason the total property damage from hurricanes and tropical storms has increased dramatically in recent years. In addition, there are claims of a long-term increase in the frequency of severe storms as a result of a warming trend in ocean surface temperatures acting as storm engines. This may or may not be true. Some of the most severe storms in history occurred about 100 years ago and 60 to 70 years ago. We have short memories, especially when something happened before our own generation. Severe storms, like the solar cycle, may come and go throughout history.

Last December, Colorado State University professor **William Gray** predicted 14 tropical storms, nine hurricanes and four intense hurricanes for this year's season. Some of the Eastern Pacific tropical storms are being felt in Northern California where we don't normally experience severe summer storms and lightning. To keep up with predictions for the storm season, see <http://www.storm99.com>. The information will be of particular concern to hams involved in the National Weather Service's SKYWARN program and the Hurricane Net.

We usually think of Kansas and tornadoes or Puerto Rico and hurricanes when we hear about SKYWARN. Actually, the National Weather Service maintains a San Francisco Bay web site for its SKYWARN activities at <http://www.nws.mbay.net/skywarn.html>. There are also links to the US Geological Service earthquake pages and the American Red Cross disaster pages.

Even when hurricanes are restricted to the East Coast, they can affect us because of restrictions on frequency use during declared emergencies. The FCC declared an emergency on August 22 as Hurricane Bret approached the Texas coast. This was quickly followed by a declared emergency as Hurricane Dennis swept across the Caribbean on August 26. Then starting September 14, six hundred-mile wide Hurricane Floyd caused the largest mass evacuation in US history on its journey from Florida through the New England States. ARES and RACES operators were kept busy as the storm moved from state to state. Communications Emergencies were declared first in Florida, followed by Georgia, Virginia, South and North Carolina and finally New York. Several HF frequencies were also declared as FCC emergency frequencies for use by health and welfare nets. A good place to keep track of these FCC declarations is the ARRL web site at <http://www.arrl.org>. Go to NEWS, then click on ARRL (WIAW) Bulletins.

Steve Stearns **KF6OIK** said, "The recent thunderstorms caused a stir of interest in grounding and lightning protection. This web site has some good ideas for fixed (non-mobile) stations: <http://www.sedan.org/grounds.htm>." The site, maintained by CQ Magazine Packet Radio Editor **Buck Rogers K4ABT**, has a map of the US showing the incidence of lightning storms per year. The lowest rate in the US occurs west of the Cascade

and Sierra Nevada ranges in Washington, Oregon and California. The most strikes per year occur in Florida. Nevertheless, we do have storms occasionally and should consider lightning protection. The commercial PolyPhaser site at <http://www.polyphaser.com> includes interesting and informative technical discussions about lightning protection. PolyPhaser says there are more than 8.6 million lightning strikes someplace in the atmosphere every day.

Steve also suggests we visit another web site from the US government that shows the US RF spectrum. "You can see where the amateur bands fit in the U.S. spectrum at <http://www.ntia.doc.gov/osmhome/allocchr.html>. If you have Adobe Acrobat Reader, you can open the pdf file. Be sure to zoom in twice to see the fine print. The amateur bands are in green." You can order your own copy of the spectrum chart for \$5.50.

**Willi Passmann DJ6JZ** announced his new web site, Radio-portal, is now on line. Go to <http://www.radio-portal.org> for his fast search engine developed especially for amateur radio. Online since Sept. 2<sup>nd</sup>, the site offers in depth searches for amateur radio, DXing, SWLing, Clandestines, Pirates, Satellites and Scanners. More features are planned. When asked why we need a new search engine, Willi pointed to a Los Angeles Times article dated July 8<sup>th</sup>, 1999 stating that all search engines combined cover only 42 per cent of the Web's content. Many so-called "hits" have such a bad "signal-to-noise ratio" that it's nearly impossible to find what you are looking for. Radio-portal is specialized so as to be more useful to hams. Willi has edited the German SWL magazine **ADDX KURIER** for 10 years and publishes **The Tropical Band List**. He manufactures popular Field Day and DXpedition loop and mobile antennas.

PAARA Board member **Charlie Grandjean WD6FAF** has been having a great time since he subscribed to Web TV. Here's a message he received and forwarded:

"Hi Charles, Here is the address of a neat ham page. I talked to this lady on CW the other day, and she is 91 years old, and still loves CW. Her page is her way of sharing her life with other hams she works. <<http://www.sonic.net/~wr6c>> 73, **Clem KR6A**".

When I received the message from Charlie, I immediately recognized the callsign, **WR6C**. If you hang out on 40 meters CW long enough you'll probably work **Carmen, WR6C** from Willits. I enjoyed chatting with her about three years ago, but she quickly lost interest because she claimed I was too young for her!

It's now spring with summer quickly approaching in the Southern Hemisphere. This means that there will soon be a work shift change at the bases in Antarctica and more ham radio activity from the icy continent. The visiting scientists usually include several hams that enjoy working from Antarctica. Some use portable antennas such as verticals and dipoles while working at remote bases. Others use more permanent installations at major bases where there are HF log periodic beams and Yagis. For information about working the stations in Antarctica, go to <http://www.avana.net/~polar>.

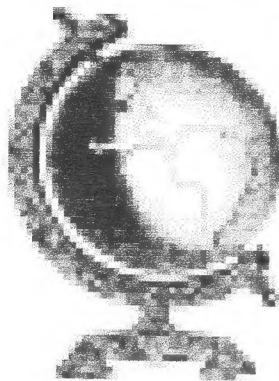
This page, maintained by **Bob Hines K4MZU** of McDonough, Georgia has maps of the bases, QSL information

(Continued on page 105) Wanderings



## Working Gray Line DX

By Paul Harden, NA5N



*Paul Harden NA5N, a technician at the National Radio Astronomy Observatory in Socorro, New Mexico, has kindly consented to write some installments for PAARAgaphs to explain radio propagation. Paul works with the VLA, or Very Large Array Observatory, which he calls the worlds largest radio telescope, and the VLBA, or Very Long Baseline Array, which he says is even larger. Here's a very concise explanation of how to increase your*

*chances of success working DX using gray line propagation.*

*—Vic Black AB6SO.*

For those of you new to a solar cycle, an interesting form of working DX is called "working gray line." This simply means working 15M or 10M during twilight hours. Here's what happens:

During the day, solar radiation collides with the molecules in our ionosphere, ripping off electrons. These electrons are called "free electrons" because they are not attached to an atom or molecule. Free electrons increase the density of the ionosphere. The denser the ionosphere, the higher the frequency that is refracted back to earth. The electron density is what determines the maximum usable frequency (MUF), and the action of solar radiation separating electrons from the molecules is called "ionization".

DURING THE DAY solar radiation causes ionization to stratify, that is it forms distinct layers. The layer closest to the earth is called the D-Layer. It does not reflect signals generally, but does absorb some energy, and hence the D-layer is often called the "absorption layer." Higher up in our ionosphere, we find the E and F layers. These layers DO reflect the signals back to earth, if below the MUF, and this is exactly what causes "skip propagation." So during the day, the sun is ionizing the D, E and F layers (there are actually two F layers, called F1 and F2). Your 10M signal must travel through the D-layer, getting attenuated, then bounces back from the E or F layer to some exotic DX spot, passing through the D-layer for more absorption again. But since solar radiation has to travel the farthest to get the D-layer, absorption is usually fairly minimal. So far, middle of the day, we have moderate absorption and good skip propagation.

AT SUNDOWN solar radiation no longer strikes our ionosphere right above our heads, and ionization stops. This means there is no solar radiation to form free electrons. In fact, without this solar radiation, free electrons tend to get attracted back to recombine with their host molecules. This is called "recombination" (Gee, how original!). Recombination, when it starts to get dark, causes the electron density to decrease, forcing the MUF to go down as well, which is why by total darkness, 10M (and a bit later 15M) is completely dead. The MUF is far below 28MHz.

The D-layer is the FIRST layer where ionization stops, since

the sunlight is no longer reaching near the surface of the earth, but it is still illuminating (and ionizing) the ionosphere far above our heads. (For the same reason we can see satellites pass overhead in the early evening. It's dark on the ground, but the satellites are still being illuminated). As the D-layer goes into recombination, the electron density and absorption both decrease. This is why signals appear stronger at night. There is less absorption by the D-layer then.

BUT DURING TWILIGHT, OR IN THE "GRAY LINE", the D-layer suddenly causes little absorption to signals passing through it, while the E and F layers are still being strongly ionized by sunlight. This makes for about 45-60 minutes of interesting operating, especially for QRP. There is almost no signal attenuation, while the MUF is still very high, so long distance skip is still possible. However, when the sun quits illuminating the E and F layers, the MUF can drop dramatically, sometimes with a few minutes of warning, sometimes between heartbeats. So when you establish contact, get the QSL info fast, hi.

One other advantage of gray line DX, is that your signals tend to reflect off the edge of the ionized portion of the upper layers. This means propagation will often be in a southerly direction, bouncing along the shadow, or terminator, between sunlight and dark. This is good for working into South America and the South Pacific. Your signals can also bounce northward along the terminator, bending around the pole, and down the MORN-ING terminator across eastern Europe, the middle East and into Africa (depending on time of year). So gray-line DX also affords an opportunity to work portions of the world not usually accessible during the day, when propagation tends more toward east-west circuits.

The same principals apply at sunrise, as the upper ionosphere begins to ionize, while the D-layer is still dark and offers low absorption. Although the MUF in the morning generally does not support propagation on 10M, most people enjoy gray-line work on 20M or 15M (if open). Morning gray-line can even be eventful on 80 and 40M, due to the low absorption before the sun starts heating the D-layer.

And remember, 10 and 15M (and often down to 30M) are NOT generally bothered by a geomagnetic storm. So even during major geomagnetic storming, the higher bands may be open and fairly quiet. And even if a bit noisy, then the short period of gray-line operating can still produce a couple of good QSO's.

I hope this helps you to understand the "gray line" phenomenon, and I hope it helps you snag a few new ones.

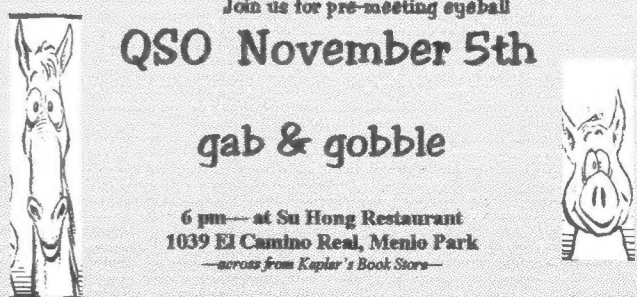
—Good Luck. Paul, NA5N.

Join us for pre-meeting eyeball

## QSO November 5th

### gab & gobble

6 pm— at Su Hong Restaurant  
 1039 El Camino Real, Menlo Park  
*—across from Kaplan's Book Store—*



## LEDs

(This appeared in the June 1999 issue of "KEY-KLIX", the newsletter of the Santa Barbara ARC, by Jim Henry-KE6WGO.) —ARNS

QRP operation and low power lights are a natural combination. Imagine a lamp that uses 1/10<sup>th</sup> the power that a normal incandescent lamp uses, while still providing useable light. I say 'useable' because the color may not be white, and the intensity may be lower, but it works well, as I found out while camping with my family.

Last summer Don Klipstein wrote: "The HLMP-DD16 is an amazing, very slightly orangish red LED lamp with an overall luminous efficacy ranging from 19 to 23 lumens per watt according to my tests. The conversion efficiency is the best I have seen of any bright LED's- varying from 13 to 16 percent. This is a 5 mm (T1-3/4) lamp. Rated brightness is 3.6 candela and the nominal beam diameter is 15 degrees. Peak wavelength is 639nm and the dominant wavelength is 630 nm according to the datasheet."

You can experiment using a similar, readily available 'Orange Jumbo High Brightness' LED from Radio Shack (276-206). While a bit pricey at \$3.99 each, the 12000 mcd part does a good job, and the savings in batteries will more than offset your initial cost and effort. Here's what I did to package this LED for my 2 AA cell (3V) flashlight:

1. Make sure the plastic LED housing is about the same size as the glass bulb of the existing lamp so it will fit into your flashlight.

2. Take a flashlight lamp and carefully remove the glass with a pair of needle nose pliers. CAUTION: wear eye protection. You may collect the glass slivers by crushing the bulb inside a paper bag.

3. De-solder the wire from the bottom of the bulb and remove enough solder to open a hole in the bottom of the metal socket.

4. Clip the longest (+) lead of the LED just long enough to carefully solder a 27-ohm resistor close to the bottom of the LED so it will fit inside the metal socket.

5. Bend the remaining (-) lead to fit into the notch on the side of the socket, and fold it down so it may be soldered on the outside.

6. Insert the LED and resistor assembly into the socket and solder.

The 27-ohm resistor was selected to work with both alkaline and NiCad batteries for the nominal 1.9 Volt forward voltage drop of this part. You will get about eight times the battery life with this LED lamp compared to the original. The LED itself will probably last longer than the flashlight housing it.

This red-orange light will also help preserve your night vision, making other ambient light more effective. You won't get the tunnel vision and momentary 'blinding' experienced with an intense white beam. Mariners and astronomers have known this for many years. Red LED flashlights are a popular accessory astronomers use while adjusting their equipment.

Combinations of red, green, and blue LED's can produce

"white" light Some manufacturers use a blue LED with phosphors like those in fluorescent lamps to produce a white LED.

Narrow beam angles make reflectors unnecessary. Large arrays of LED's provide bright, reliable illumination for stop lights. The efficiency of these devices greatly reduces requirements for solar powered applications.

Whiterook Products [<http://www.electronicsusa.com> (805)-339-0702] sells the MK-79ES QRP lamp with five yellow LED's running about 24 ma from a 12 V source. That's 50 hours continuous use on a 1.2 Ah battery! This model has an optional pushbutton and switch. The red housing is designed to sit on top of your rig illuminating the dial and logbook below. Considering current prices (and minimum order numbers) for the parts alone, it's a good value at \$25.

For more information about efficient high brightness LED's see the following WWW page by Don Klipstein: <http://www.misty-com/-don/led.html>



LOOK WHAT SOME IDIOT THREW AWAY--- I BET I COULD MAKE AN OMNI-DIRECTIONAL GAIN ANTENNA OUT OF THIS

April 28, 1999  
Report No. CI 99-16

### COMPLIANCE AND INFORMATION ACTION FCC PROCEDURES FOR COMPLAINTS ABOUT AMATEUR RADIO

The FCC today announced that it has adopted new, improved procedures for persons to use the internet to file amateur radio service complaints with the FCC. Effective immediately, amateur radio service complaints should be sent by electronic mail to the following internet address:

[fccham@fcc.gov](mailto:fccham@fcc.gov)



## GOOD OLD STUFF

This table was printed in PAARAgaphs several years ago, submitted by **Rick Ferranti, WA6NCX** long before he went away to college. He wrote on the bottom about typing it up "whilst listening to some Baroque music on KSMO" or some other classical music station of the era. This table has been invaluable thru these many years, and have passed it on to our son. It is **ONLY** to check these small batteries. I have a permanent bunch of appropriate resistors with clip leads. The original paper has been long gone, eaten up by bugs in my remote back yard tool shed.

*Thanks to Rick WA6NCX for the table and to Ron Panton W6VG for bringing it alive again.-ed.*

### BATTERY TEST TABLE

(From Popular Electronics)

| Battery rating (volts) | Shunt (ohms) | Discard (volts) |
|------------------------|--------------|-----------------|
| 1.5 (C, D)             | 13           | 1.27            |
| 1.5 (AA) AAA           | 130          | 1.27            |
| 3.0                    | 300          | 2.55            |
| 4.5                    | 430          | 3.70            |
| 6.0 (not car batts)    | 620          | 5.10            |
| 7.5                    | 820          | 6.40            |
| 9.0                    | 1000         | 7.70            |
| 10.5                   | 1100         | 8.90            |
| 12.0 (not car batts)   | 1200         | 10.20           |
| 15.0                   | 1600         | 12.70           |
| 22.5                   | 2200         | 18.70           |
| 30.0                   | 2700         | 25.50           |
| 45.0                   | 3900         | 38.10           |
| 67.5                   | 5600         | 57.50           |
| 75.0                   | 6200         | 64.00           |
| 90.0                   | 7500         | 76.50           |

Put shunt resistor across the corresponding battery momentarily during your measurement of the voltage in the battery. If it is higher than the above Discard V, keep it.

(Continued from page 99) Ponderings

They were reminded by the FCC that all ham bands are shared by the hams and the commercial interests would have to learn to cope as the hams have done. (Perhaps this is the FCC's way of telling manufacturers to RFI-proof their consumer products).

Highlights are as follows: Formerly we were restricted to two types of spreading techniques, frequency hopping and direct sequence spreading. Now we will be able to use other spreading techniques. In its report, the FCC noted that commercial interests have developed other techniques for Part 15 devices such as Personal Communications Service, vehicle locators, medical telemetry and mobile Internet access, such as Metri-com Ricochet. The FCC feels that the FCC rules themselves may have prevented hams from being as creative as we would normally have been. In addition, the use of SS was restricted to use among FCC licensed stations. Now it will be possible to use SS with hams in any countries that allow that technique. Power is restricted to 100 watts maximum, but stations running more than 1 watt must incorporate automatic power control to reduce power to the minimum needed for communications. The FCC agreed to let hams develop our own identification conventions for use with SS.

Spread spectrum is being treated similar to Part 15 devices in that it will remain secondary to, and must accept interference from, stations employing other authorized modes. Former rules required extensive record keeping for all SS use by hams. Those requirements have been dropped since they are no longer considered necessary. Some commercial companies were concerned that hams would acquire commercial equipment and modify it for ham use. The FCC has more or less agreed to encourage that to happen in order to accelerate ham experimentation with SS.

If you have one of the popular Icom 706s, look for an article in the upcoming December 99 QST for a PIC-based direct frequency entry keypad to make programming your radio easier. Also, some of us have received reports of distorted audio at times while mobile at rest using the 706 and other radios. It now appears that the radios are sensitive to low battery voltage. Starting the car and recharging the battery for a couple of minutes seems to fix the problem.

Quiz of the month: What non-ham club in Northern California has the largest number of licensed hams? Wings of Rogallo (WOR), named for the NASA scientist who first proposed a Mylar wing for use as an astronaut recovery system, is the premier hang gliding club in Northern California. Two thirds of their 600 members are licensed hams. They are mostly in the 25 - 35 age group. This figure only includes licensed pilots. If you include their ham-licensed spouses and ground crew drivers, the number may be close to double that.

Most are Technician class, but many have upgraded to Tech Plus, General or Advanced with a sprinkling of Extra Class licensees. This makes WOR one of the largest ham clubs in Northern California. Most of these 400 hams use their licenses solely for hang gliding purposes and have not been fully integrated into the mainstream ham radio fraternity. In fact, many are often accused of being unlicensed pirates since they only talk when necessary, are very busy when flying and identify only every 10 minutes, as required by law. During those 10 minutes they often fly out of simplex range and others fly into

range. To an observer on the ground it sounds as if they never ID. Another large group of licensed hams who haven't been fully embraced by other hams is the yachting people. These groups, plus the recreational vehicle clubs, are fertile grounds for recruiting hams into the overall fraternity.

If you've been struggling with the metric system it might help you to know one more equivalent: one million Microphones equals one Megaphone.

## Honorary Member 1999

Kurt Kiesow III, KF6QNC

(Continued from page 101) Wanderings

(both old and new), photos, and much more. There are links to Antarctic history and the Antarctic Treaty. Check the Diamond DX Club portion of the site for information about the Worked Antarctic Bases Award (WABA) and Worked Antarctic Stations Award (WASA). Note that many of the remote bases are on islands and count for IOTA credit as well. Some prefixes you may run across include CE9, FT8Y, KC4 (Byrd, Mc Murdo, Palmer), R1AN, Y90, ZL0 (Scott) and ZL5 (Scott).

It's that time of year again. Mark your calendar for November 18, the predicted peak for Leonids meteor activity. A major meteor storm was predicted for last year. Instead we had a very intense shower, but no storm. Some astronomers predicted that the storm would occur this year in the 32 - 33 year storm cycle. Last year's shower was early and some meteor propagation fans missed out on the exciting VHF and UHF conditions that accompanied the display. At any rate, November 18 is expected to be the center of activity with some activity before and after that date. Several ham radio pages feature meteor scatter work. Try <<http://www.scit.wlv.ac.uk/vhfc/iaru.r1.vhfm.4e/5B.html>> for "Operating Procedures for Meteor Scatter QSO's". Go to <<http://fs1.ilk.de/sites/gap>> for "Meteor Scatter, Aurora & Solar Activity for VHF Radio Amateurs". For information about this year's expected activity, see <<http://www-space.arc.nasa.gov/~leonid>> for a description of the NASA 99 Airborne Mission. Also, try the International Meteor Organization page at <<http://www.imo.net/leo99/leo99index.html>> for general information about the storm.

## NEW PAARA MEMBERS

Nolan Katz, KB6LT  
1030 Silver Hill Rd.  
Redwood City, CA 94061

—Thanks to Vic, AB6SO



## HAM SCOUTS

(By Steve Place-WB1EYI (Adapted from QST, February, 1988). This appeared in the August 1999 edition of "Key-Klix", the newsletter of the Santa Barbara ARC, Terri Mekker-KF6DZK Editor.) ARNS

The merit badge plan is based on the concept that a counselor working closely with a Scout acquaints the boy with an adult knowledgeable in one or more fields. The counselor introduces the Scout to subjects that may lead to a career choice or to a life-time hobby.

From astronauts to high-tech patent holders to corporate officers in the electronics industry, many people's careers grew out of their early involvement in Amateur Radio. Today's youngsters need a chance to expand their horizons both intellectually and socially through wholesome, challenging and constructive activities.

The millions of boys who can now be exposed to Amateur Radio through Scouting may not have that opportunity in years to come. Though we can't realistically expect "Radio to compete with required badges such as cooking, camping and first aid with active counselors, we have the opportunity to reach thousands of 11- to 14-year-old Scouts. We're betting that with your experience and enthusiasm for Amateur Radio, many of those Scouts will quickly outgrow the limitations of the Radio Merit Badge and seek your help in earning their tickets.

Though earning the badge represents a significant achievement to a Scout, he still can't transmit with it.

### Do You Qualify?

"Merit badge counselors do not necessarily have to register as adult Scouters, but they must meet Scouting's membership requirements. They must be men and women of good character over age 18, recognized as having the skills and education in the subjects for which they are to serve as merit badge counselors, as well as having the ability to work with Scout-age boys."

What's the first step? Get the approval of your regional BSA Council. They'll explain the merit badge counselor's role. Start with a local Boy Scout troop. If you're a newcomer to Scouting, simply call your local Council office; most are listed in the white pages of the telephone book under "Boy Scouts of America." Tell them you want to register as a counselor for the Radio Merit Badge and they'll put you in touch with the right person at the District or Council level.

They'll want your name, address and phone number, and permission to release them in a listing of the Council's merit badge counselors. The list is distributed annually to all Scout troops in your area. They'll also want to know why you're interested in becoming a radio merit badge counselor and what your qualifications are. The fact that you're an FCC-licensed radio amateur and an adult who knows the importance of a youngster's developing an interest in the sciences, a familiarity with modern technology, a first-hand appreciation of other cultures and a personal sense of citizenship in the world should be sufficient.

The Boy Scouts publish a series of booklets covering the requirements and some instructional information on the merit badges. Pick up a copy of the latest book for the Radio merit Badge from your Council office or local Scouting supplier. I feel that if Amateur Radio is to flourish in the 21<sup>st</sup> Century, then we must educate our youth about the wonderful world of Amateur Radio.

(Want PAARA to help? Contact Doug Mecham, KC6UKL) —ed.



**VE** Sunday, October 24 was the day this month for the VE session. It was held at the Sequoia Yacht Club in Redwood City. Very enjoyable surroundings. Yachts at their moorings, yachts sailing, beautiful weather, birds swimming, etc. The VE cast included **Al Montoya, Dan Curry, Gordon Girton, Bill Sooman, Ron Panton.** Also a very welcome addition was **Wendy Montoya.** (overseeing the lunch chef) Contrary to published info, **Bill Sooman** did bring along the CW test equipment, and put it to good use. I hope all the 20 some applicants enjoyed this session as much as we all did.

—Ron, W6VG



IT'S A SCALE MODEL OF GEORGE'S HAM SHACK INSIDE -- IT'S THE ONLY WAY I CAN GET HIM TO TAKE ME OUT

## REMEMBER WHEN

(This appeared in the July 1999 edition of the newsletter of the Douglas County ARC, Ken Blair-KCØGL Editor.) ARNS

Being sent to the drugstore to test vacuum tubes for the TV or radio.  
 When Kool-Aid was the only drink for kids, other than milk and sodas.  
 When boys couldn't wear anything but leather shoes to school.  
 When it took five minutes for the TV to warm up and the picture to stop rolling.  
 When all your friends got their hair cut at the kitchen table.  
 When nearly everyone's mom was at home when the kids got there.  
 When nobody owned a purebred dog.  
 When a dime was a decent allowance, and a quarter a huge bonus.  
 When you'd reach into a muddy gutter for a penny.  
 When girls neither dated nor kissed until late high school, if then.  
 When your mom wore nylons that came in two pieces.  
 When all your teachers wore either neckties or had their hair done, everyday.  
 When Bible reading and prayer started every school day.  
 When you got your windshield cleaned, oil checked, and gas pumped, without asking, for free, every time. And you got trading stamps to boot!  
 When laundry detergent had free glasses, dishes or towels hidden inside the box  
 When any parent could discipline any kid, or feed him, or use him to carry groceries, and nobody not even the kid, thought a thing of it.  
 When it was considered a great privilege to be taken out to dinner at a real restaurant with your parents.  
 When they threatened to keep kids back a grade if they failed - and did!  
 When women were called, "Mrs. John Smith," instead of their own name.  
 ... And Finally ...  
 When being sent to the principal's office was nothing compared to the fate that awaited a misbehaving student at home.





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These fees may be reduced or waived in exchange for a valuable consideration that is given to the Association or its general membership. Such consideration must be in addition to any existing arrangements with the association.

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**PAARA • Palo Alto Amateur Radio Association • P.O. Box 911, Menlo Park, California 94026-0911**

- Club meetings are on the first Friday of each month, 7:30pm at the Menlo Park Recreation Center, 700 Alma Street, Menlo Park, CA.
- Radio NET every Monday evening, at 8:30pm, on the 145.230-600 MHz repeater, PL tone off.

Membership in PAARA is \$12.00 per calendar year which includes a subscription to PAARAgaphs, \$6 for additional family members (no newsletter).  
Make payment to the Palo Alto Amateur Radio Association.

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# November 1999

**Palo Alto Amateur Radio Association, Inc.**  
**PAARAgaphs Newsletter**  
**P.O. Box 911**  
**Menlo Park, California 94026**



## INSIDE:

|                     |               |     |
|---------------------|---------------|-----|
| Calendar & Program  |               | 99  |
| Ponderings          | AB6SO         | 99  |
| Miscellaneous Dates |               | 100 |
| Contests            | AB6SO         | 100 |
| JOTA                | KC6UKL        | 100 |
| Web Wanderings      | AB6SO         | 101 |
| Gray Line           | NA5N          | 102 |
| LEDs                | KE6WGO        | 103 |
| FCC Complaints      |               | 103 |
| Battery Test Table  | WA6NCX & W6VG | 104 |
| Honorary Member     | KF6QNC        | 105 |
| New Member          | KB6LT         | 105 |
| Ham Scouts          | WB1EYI        | 106 |
| Remember When       | KC0GL         | 106 |
| VE                  | W6VG          | 106 |

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